

SEQUENCE LISTING

<110> Kim, Tae-Wan

Lee, Hahn-Jun

<120> NOVEL MODULATORS OF AMYLOID-BETA PRODUCTION AND USES THEREOF

<130> 5199/14

<160> 74

<170> PatentIn version 3.1

<210> 1

<211> 1345

<212> DNA

<213> Homo sapiens

<400> 1

ccacccccc tccacactga ccagccatgg gggctgcggt gttttcggc tgcactttcg 60

tcgcgttcgg cccggcccttc gcgcgtttct tgcgtactgt ggctggggac ccgcgttcgg 120

ttatcatcct ggtcgccaggg gcattttctt ggctggtctc cctgctcctg gcctctgtgg 180

tctggttcat cttggtccat gtgaccgacc ggtcagatgc ccggatcctg gtgcaggggg 240

cattttctg gctggtctcc ctgctcctgg cctctgtggt ctggttcatc ttggtccatg 300

tgaccgaccg gtcagatgcc cggctccagt acggcctcct gatttttggt gctgctgtct 360

ctgtccctct acaggagggtg ttccgccttg cctactacaa gctgcttaag aaggcagatg 420

aggggttagc atcgctgagt gaggacggaa gatcaccat ctccatccgc cagatggcct 480

atgtttctgg tcttccttc ggtatcatca gtgggtgtctt ctctgttatac aatattttgg 540

ctgatgcact tggccaggt gtgggtggga tccatggaga ctcaccctat tacttcctga 600

cttcagcctt tctgacagca gccattatcc tgctccatac cttttggggaa gttgtgttct 660

Columbia 5199-14 6-20.ST25.txt

tttatgcctg ttagaggaga cggtaactggg ctttgggcct ggtggttggg agtacacccac 720
tgacatcggtt actgacattc ctgaacccct ggtatgaggc cagcctgtg cccatctatg 780
cagtcactgt ttccatgggg ctctgggcct tcatcacagc tggagggtcc ctccgaagta 840
ttcagcgcag ctcttgtta aggactgact acctggactg atgcgcgtac agatcccacc 900
tgcctgtcca ctgccccatga ctgagcccaag ccccaagcccg gggtccattg cccacattct 960
ctgtctcctt ctgtcggtc tacccacta cctccagggt tttgcttgt cctttgtga 1020
ccgttagtct ctaagctta ccaggagcag cctgggttca gccagtcaatg gactgggtggg 1080
tttgaatctg cacttatccc caccacctgg ggaccccccgtt gttgtgtcca ggactcccc 1140
tgtgtcaatgt ctctgtctc accctgccccca agactcacct ccctccctt ctgcaggccg 1200
acggcaggag gacagtccggg ttaggggtta ttctgcctg cgcattccac ccgaggactg 1260
aggaaaccta ggggggaccc ctgggcctgg ggtgcctcc ttagtgcctc gcccgtattt 1320
tctccatctc cagttctgga cagtgt 1345

〈210〉 2

<211> 1346

<212> DNA

<213> *Homo sapiens*

<400> 2

ccacccccc tccccactga ccagccatgg gggctgcgtt gttttcggc tgcaacctcg 60
tcgcgttcgg cccggcccttc gcgcgtttct tgatcactgt ggctggggac ccgcgttcg 120
ttatcatcct ggtcgcaggg gcattttct ggctggtctc cctgctcctg gcctctgtgg 180
tctggttcat cttggtccat gtgaccgacc ggtcagatgc ccggatcctg gtcgcagggg 240

Columbia 5199-14 6-20.ST25.txt

catttttctg gctggctcc ctgctcctgg cctctgtggt ctggttcatc ttggtccatg 300
tgaccgaccg gtcagatgcc cggctccagt acggcctct gattttttgt gctgctgtct 360
ctgtcccttct acaggagggtg ttccgcttgc cctactacaa gctgcttaag aaggcagatg 420
aggggttagc atcgctgagt gaggacggaa gatcaccat ctccatccgc cagatggcct 480
atgtttctgg tcttccttc ggtatcatca gtggtgtctt ctctgttatac aatattttgg 540
ctgatgcact tggccaggt gtgggtggga tccatggaga ctcaccctat tactcctga 600
cttcagcctt tctgacagca gccattatcc tgctccatac ctttggggaa gttgtgtct 660
ttgatgcctg tgagaggaga cggtaactggg ctttgggcct ggtgggtggg agtacacctac 720
tgacatcggg actgacattc ctgaaccctt ggtatgaggc cagcctgctg cccatctatg 780
cagtcactgt ttccatgggg ctctggcct tcatcacagc tggagggtcc ctccgaagta 840
ttcagcgcag cctttgtgt aaggactgac tacctggact gatcgcctga cagatcccac 900
ctgcctgtcc actgccccatg actgagccca gccccagccc ggggtccatt gcccacattc 960
tctgtctcct tctcgctggt ctacccact acctccaggg ttttgccttg tcctttgtg 1020
accgttagtc tctaagcttt accaggagca gcctgggttc agccagtcg tgactggtgg 1080
gtttgaatct gcacttatcc ccaccacctg gggacccct tgggtgtcc aggactcccc 1140
ctgtgtcagt gctctgctct caccctgccc aagactcacc tccctcccc tctgcaggcc 1200
gacggcagga ggacagtcgg gtgatggtgtt attctgcctt gcgcattccca cccgaggact 1260
gagggaacct aggggggacc cctgggcctg ggggtccctc ctgatgtcct cgcctgtat 1320
ttctccatct ccagttctgg acagtg 1346

<210> 3

<211> 1007

<212> DNA

Columbia 5199-14 6-20.ST25.txt

<213> Homo sapiens

<400> 3

ccacccccc tccccacctga ccagccatgg gggctgcggt gttttcggc tgcactttcg 60
tcgcgttcgg cccggcccttc gcgctttct tgcactgtt ggctggggac ccgcgtcg 120
ttatcatcct ggtcgccagg gcattttct ggctggtctc cctgctcctg gcctctgtgg 180
tctggttcat cttggtccat gtgaccgacc ggtcagatgc ccggatcctg gtgcagggg 240
cattttctg gctggtctcc ctgctcctgg cctctgtggt ctggttcatc ttggtccatg 300
tgaccgaccg gtcaaatgcc cggctccagt acggcctcct gatttttggt gctgctgtct 360
ctgtccttct acaggagggtg ttccgccttg cctactacaa gctgcttaag aaggcagatg 420
aggggttagc atcgctgagt gaggacggaa gatcacccat ctccatccgc cagatggcct 480
atgtttctgg tcttccttc ggtatcatca gtggtgtctt ctctgttatac aatattttgg 540
ctgatgcact tggccaggt gtgggtggga tccatggaga ctcaccctat tacttcctga 600
cttcagcctt tctgacagca gccattatcc tgctccatac ctttggggaa gttgtgttct 660
ttgatgcctg tgagaggaga cggtaactggg ctttgggcct ggtgggtggg agtacacccat 720
tgacatcggtt actgacattc ctgaaccctt ggtatgaggc cagcctgtg cccatctatg 780
cagtcactgt ttccatgggg ctctgggcct tcatcacagc tggagggtcc ctccgaagta 840
ttcagcgcag cctttgtgc cgacggcagg aggacagtctg ggtgatggtg tattctgccc 900
tgcgcatccc acccgaggac tgagggaaacc tagggggac ccctgggcct ggggtgccc 960
cctgatgtcc tcgcccgtta ttctccatc tccagttctg gacagtg 1007

<210> 4

<211> 254

<212> PRT

<213> Homo sapiens

<400> 4

Met Gly Ala Ala Val Phe Phe Gly Cys Thr Phe Val Ala Phe Gly Pro
1 5 10 15

Ala Phe Ala Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu Arg Val
20 25 30

Ile Ile Leu Val Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Leu
35 40 45

Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr Asp Arg Ser Asp
50 55 60

Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly Ala Ala Val Ser Val
65 70 75 80

Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys
85 90 95

Ala Asp Glu Gly Leu Ala Ser Leu Ser Glu Asp Gly Arg Ser Pro Ile
100 105 110

Ser Ile Arg Gln Met Ala Tyr Val Ser Gly Leu Ser Phe Gly Ile Ile
115 120 125

Ser Gly Val Phe Ser Val Ile Asn Ile Leu Ala Asp Ala Leu Gly Pro
130 135 140

Gly Val Val Gly Ile His Gly Asp Ser Pro Tyr Tyr Phe Leu Thr Ser

Columbia 5199-14 6-20.ST25.txt

145 150 155 160

Ala Phe Leu Thr Ala Ala Ile Ile Leu Leu His Thr Phe Trp Gly Val
165 170 175

Val Phe Phe Asp Ala Cys Glu Arg Arg Arg Tyr Trp Ala Leu Gly Leu
180 185 190

Val Val Gly Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu Asn Pro
195 200 205

Trp Tyr Glu Ala Ser Leu Leu Pro Ile Tyr Ala Val Thr Val Ser Met
210 215 220

Gly Leu Trp Ala Phe Ile Thr Ala Gly Gly Ser Leu Arg Ser Ile Gln
225 230 235 240

Arg Ser Ser Cys Val Arg Thr Asp Tyr Leu Asp Pro Ser Phe
245 250

<210> 5

<211> 247

<212> PRT

<213> Homo sapiens

<400> 5

Met Gly Ala Ala Val Phe Phe Gly Cys Thr Phe Val Ala Phe Gly Pro
1 5 10 15

Ala Phe Ala Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu Arg Val
20 25 30

Columbia 5199-14 6-20.ST25.txt

Ile Ile Leu Val Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Leu
35 40 45

Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr Asp Arg Ser Asp
50 55 60

Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly Ala Ala Val Ser Val
65 70 75 80

Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys
85 90 95

Ala Asp Glu Gly Leu Ala Ser Leu Ser Glu Asp Gly Arg Ser Pro Ile
100 105 110

Ser Ile Arg Gln Met Ala Tyr Val Ser Gly Leu Ser Phe Gly Ile Ile
115 120 125

Ser Gly Val Phe Ser Val Ile Asn Ile Leu Ala Asp Ala Leu Gly Pro
130 135 140

Gly Val Val Gly Ile His Gly Asp Ser Pro Tyr Tyr Phe Leu Thr Ser
145 150 155 160

Ala Phe Leu Thr Ala Ala Ile Ile Leu Leu His Thr Phe Trp Gly Val
165 170 175

Val Phe Phe Asp Ala Cys Glu Arg Arg Tyr Trp Ala Leu Gly Leu
180 185 190

Val Val Gly Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu Asn Pro
195 200 205

Columbia 5199-14 6-20.ST25.txt

Trp Tyr Glu Ala Ser Leu Leu Pro Ile Tyr Ala Val Thr Val Ser Met
210 215 220

Gly Leu Trp Ala Phe Ile Thr Ala Gly Gly Ser Leu Arg Ser Ile Gln
225 230 235 240

Arg Ser Leu Leu Cys Lys Asp
245

<210> 6

<211> 269

<212> PRT

<213> Homo sapiens

<400> 6

Met Gly Ala Ala Val Phe Phe Gly Cys Thr Phe Val Ala Phe Gly Pro
1 5 10 15

Ala Phe Ala Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu Arg Val
20 25 30

Ile Ile Leu Val Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Leu
35 40 45

Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr Asp Arg Ser Asp
50 55 60

Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly Ala Ala Val Ser Val
65 70 75 80

Columbia 5199-14 6-20.ST25.txt

Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys
85 90 95

Ala Asp Glu Gly Leu Ala Ser Leu Ser Glu Asp Gly Arg Ser Pro Ile
100 105 110

Ser Ile Arg Gln Met Ala Tyr Val Ser Gly Leu Ser Phe Gly Ile Ile
115 120 125

Ser Gly Val Phe Ser Val Ile Asn Ile Leu Ala Asp Ala Leu Gly Pro
130 135 140

Gly Val Val Gly Ile His Gly Asp Ser Pro Tyr Tyr Phe Leu Thr Ser
145 150 155 160

Ala Phe Leu Thr Ala Ala Ile Ile Leu Leu His Thr Phe Trp Gly Val
165 170 175

Val Phe Phe Asp Ala Cys Glu Arg Arg Tyr Trp Ala Leu Gly Leu
180 185 190

Val Val Gly Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu Asn Pro
195 200 205

Trp Tyr Glu Ala Ser Leu Leu Pro Ile Tyr Ala Val Thr Val Ser Met
210 215 220

Gly Leu Trp Ala Phe Ile Thr Ala Gly Gly Ser Leu Arg Ser Ile Gln
225 230 235 240

Arg Ser Leu Leu Cys Arg Arg Gln Glu Asp Ser Arg Val Met Val Tyr
245 250 255

Columbia 5199-14 6-20.ST25.txt

Ser Ala Leu Arg Ile Pro Pro Glu Asp Pro Ser Phe Asx
260 265

<210> 7

<211> 1923

<212> DNA

<213> Homo sapiens

<400> 7

ccccctccat ttgcctgtcc tggtcaggcc cccacccccc ttcccacctg accagccatg 60
ggggctgcgg ttttttcgg ctgcactttc gtcgcgttcg gcccggcctt cgcgcctttc 120
ttgatcactg tggctgggaa cccgcttcgc gttatcatcc tggtcgcagg ggcattttc 180
tggctggtct ccctgctcct ggcctctgtg gtctggttca tcttggtcca tgtgaccgac 240
cggtcagatg cccggctcca gtacggcctc ctgattttg gtgctgctgt ctctgtcctt 300
ctacaggagg tttcccgctt tgcctactac aagctgctta agaaggcaga tgggggtta 360
gcatcgctga gtgaggacgg aagatcaccc atctccatcc gccagatggc ctatgtttct 420
ggtctctcct tcggtatcat cagtggtgtc ttctctgtta tcaatatttt ggctgatgca 480
cttgggccag gtgtggttgg gatccatgga gactcacct attacttcct gacttcagcc 540
tttctgacag cagccattat cctgctccat acctttggg gagttgtgtt ctttgatgcc 600
tgtgagagga gacggtactg ggctttggc ctggtggttg ggagtacacct actgacatcg 660
ggactgacat tcctgaaccc ctggtatgag gccagcctgc tgcccatcta tgcaagtca 720
gtttccatgg ggctctggc cttcatcaca gctggagggt ccctccgaag tattcagcgc 780
agctcttgtg taaggactga ctacctggac tgcgcctg acagatccca cctgcctg 840

Columbia 5199-14 6-20.ST25.txt

cactgccccat gactgagccc agccccagcc cggggccat tgcccacatt ctctgtctcc 900
ttctcgtcgg tctacccac tacctccagg gtttgcttt gtcctttgt gaccgttagt 960
ctctaagctt taccaggagc agcctgggtt cagccagtca gtgactggtg ggtttgaatc 1020
tgcaacttac cccaccaccc ggggacccccc ttgttgtgc caggactccc cctgtgtcag 1080
tgctctgctc tcaccctgcc caagactcac ctccctccc ctctgcaggc cgacggcagg 1140
aggacagtcg ggtgatggtg tattctgccc tgcgcacccc acccgaggac tgagggaaacc 1200
tagggggac ccctgggcct ggggtgcct cctgatgtcc tgcgcctgta ttctccatc 1260
tccagttctg gacagtgcag gttgccaaga aaagggaccc agtttagcca ttgcctgga 1320
gatgaaatta atggaggctc aaggatagat gagctctgag ttctcagta ctccctcaag 1380
actggacatc ttggtctttt tctcaggcct gagggggaaac cattttgggt gtgataaata 1440
ccctaaactg ccttttttc ttttttggg tggggggagg gaggaggat attggaaatc 1500
ttctaacctc cttgggctat atttctctc ctgcgttgc tcctcatggc tgggctcatt 1560
tcggtccctt tctccttggt cccagaccc ttggggaaagg aaggaatgc atgtttggga 1620
actggcatta ctggaaactaa tggtttaac ctcccttaacc accagcatcc ctccctccc 1680
caaggtgaag tggagggtgc tgggtgagc tggccactcc agagctgcag tgccactgga 1740
ggagtcaagc taccatgaca tcgttagggaa ggaggggaga ttttttggta gtttttaatt 1800
ggggtgtggg agggcgggg aggttttcta taaactgtat cattttctgc tgagggtgga 1860
gtgtcccatc ctttaatca aggtgattgt gatttgact aataaaaaag aatttgtaaa 1920
aaa 1923

<210> 8

<211> 251

<212> PRT

Columbia 5199-14 6-20.ST25.txt

<213> Homo sapiens

<400> 8

Met Gly Ala Ala Val Phe Phe Gly Cys Thr Phe Val Ala Phe Gly Pro
1 5 10 15

Ala Phe Ala Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu Arg Val
20 25 30

Ile Ile Leu Val Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Leu
35 40 45

Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr Asp Arg Ser Asp
50 55 60

Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly Ala Ala Val Ser Val
65 70 75 80

Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys
85 90 95

Ala Asp Glu Gly Leu Ala Ser Leu Ser Glu Asp Gly Arg Ser Pro Ile
100 105 110

Ser Ile Arg Gln Met Ala Tyr Val Ser Gly Leu Ser Phe Gly Ile Ile
115 120 125

Ser Gly Val Phe Ser Val Ile Asn Ile Leu Ala Asp Ala Leu Gly Pro
130 135 140

Gly Val Val Gly Ile His Gly Asp Ser Pro Tyr Tyr Phe Leu Thr Ser
145 150 155 160

Columbia 5199-14 6-20.ST25.txt

Ala Phe Leu Thr Ala Ala Ile Ile Leu Leu His Thr Phe Trp Gly Val
165 170 175

Val Phe Phe Asp Ala Cys Glu Arg Arg Arg Tyr Trp Ala Leu Gly Leu
180 185 190

Val Val Gly Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu Asn Pro
195 200 205

Trp Tyr Glu Ala Ser Leu Leu Pro Ile Tyr Ala Val Thr Val Ser Met
210 215 220

Gly Leu Trp Ala Phe Ile Thr Ala Gly Gly Ser Leu Arg Ser Ile Gln
225 230 235 240

Arg Ser Ser Cys Val Arg Thr Asp Tyr Leu Asp
245 250

<210> 9

<211> 1273

<212> DNA

<213> Homo sapiens

<400> 9

ccccctccat ttgcctgtcc tggtcaggcc cccacccccc ttcccacctg accagccatg 60

ggggctgcgg tggttttcgg ctgcactttc gtcgcgttcg gcccggcctt cgcgctttc 120

ttgatcactg tggctgggga cccgcttcgc gttatcatcc tggtcgcagg ggcattttc 180

tggctggctct ccctgctctt ggcctctgtg gtctggttca tcttggtcca tgtgaccgac 240

cggtcagatg cccggctcca gtacggcctc ctgattttg gtgctgtgt ctctgtcctt 300

Columbia 5199-14 6-20.ST25.txt

ctacaggagg tggccgtt tgccctactac aagctgctta agaaggcaga tgaggggta 360
gcatcgctga gtgaggacgg aagatcaccc atctccatcc gccagatggc ctatgtttct 420
ggtctctcct tcggtatcat cagtgggtgc ttctctgtta tcaatatttt ggctgatgca 480
cttggccag gtgtggttgg gatccatgga gactcaccc attacttct gacttcagcc 540
tttctgacag cagccattat cctgctccat accctttggg gagttgtgtt ctttgcgtcc 600
tgtgagagga gacggtactg ggctttgggc ctgggtggtg ggagtccacct actgacatcg 660
ggactgacat tcctgaaccc ctggtatgag gccagcctgc tgcccatcta tgcaagtact 720
gtttccatgg ggctctggc cttcatcaca gctggagggt ccctccgaag tattcagcgc 780
agcctcttgt gtaaggactg actacctgga ctgatgcct gacagatccc acctgcctgt 840
ccactgccc tgactgagcc cagccccagc ccgggtccat tgcccacatt ctctgtctcc 900
ttctcgtcgg tctacccac tacctccagg gtttgcttt gtccttttgt gaccgttagt 960
ctctaagctt taccaggagc agcctgggtt cagccagtca gtgactggtg ggtttgaatc 1020
tgcaacttac cccaccaccc ggggaccccc ttgttgtgc caggactccc cctgtgtcag 1080
tgctctgctc tcacccctgcc caagactcac ctccctccc ctctgcaggc cgacggcagg 1140
aggacagtcg ggtgatggtg tattctgccc tgcgcatccc acccgaggac tgagggaaacc 1200
taggggggac ccctgggcct ggggtgcccct cctgatgtcc tcgcccgtta tttctccatc 1260
tccagttctg gac 1273

<210> 10

<211> 247

<212> PRT

<213> Homo sapiens

Columbia 5199-14 6-20.ST25.txt

<400> 10

Met Gly Ala Ala Val Phe Phe Gly Cys Thr Phe Val Ala Phe Gly Pro
1 5 10 15

Ala Phe Ala Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu Arg Val
20 25 30

Ile Ile Leu Val Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Leu
35 40 45

Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr Asp Arg Ser Asp
50 55 60

Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly Ala Ala Val Ser Val
65 70 75 80

Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys
85 90 95

Ala Asp Glu Gly Leu Ala Ser Leu Ser Glu Asp Gly Arg Ser Pro Ile
100 105 110

Ser Ile Arg Gln Met Ala Tyr Val Ser Gly Leu Ser Phe Gly Ile Ile
115 120 125

Ser Gly Val Phe Ser Val Ile Asn Ile Leu Ala Asp Ala Leu Gly Pro
130 135 140

Gly Val Val Gly Ile His Gly Asp Ser Pro Tyr Tyr Phe Leu Thr Ser
145 150 155 160

Ala Phe Leu Thr Ala Ala Ile Ile Leu Leu His Thr Phe Trp Gly Val
165 170 175

Columbia 5199-14 6-20.ST25.txt

Val Phe Phe Asp Ala Cys Glu Arg Arg Arg Tyr Trp Ala Leu Gly Leu
180 185 190

Val Val Gly Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu Asn Pro
195 200 205

Trp Tyr Glu Ala Ser Leu Leu Pro Ile Tyr Ala Val Thr Val Ser Met
210 215 220

Gly Leu Trp Ala Phe Ile Thr Ala Gly Gly Ser Leu Arg Ser Ile Gln
225 230 235 240

Arg Ser Leu Leu Cys Lys Asp
245

<210> 11

<211> 939

<212> DNA

<213> Homo sapiens

<400> 11

ccccctccat ttgcctgtcc tggtcaggcc cccacccccc ttcccacctg accagccatg 60

ggggctgcgg tgttttcgg ctgcactttc gtcgcgttcg gcccggcctt cgcgctttc 120

ttgatcactg tggctggga cccgcttcgc gttatcatcc tggtcgcagg ggcattttc 180

tggctggctc ccctgctcct ggcctctgtg gtctggttca tcttggtcca tgtgaccgac 240

cggtcagatg cccggctcca gtacggcctc ctgattttg gtgctgctgt ctctgtcctt 300

ctacaggagg tggcccgctt tgcctactac aagctgctta agaaggcaga tgggggtta 360

Columbia 5199-14 6-20.ST25.txt

gcatcgctga gtgaggacgg aagatcaccc atctccatcc gccagatggc ctatgtttct 420
ggtctctccct tcggtatcat cagtggtgtc ttctctgtta tcaatatttt ggctgatgca 480
cttgggccag gtgtgggtgg gatccatgga gactcacctt attacttcct gacttcagcc 540
tttctgacag cagccattat cctgctccat acctttggg gagttgtgtt ctttgatgcc 600
tgtgagagga gacggtactg ggctttggc ctggtggttgg ggagtacactt actgacatcg 660
ggactgacat tcctgaaccc ctggtatgag gccagcctgc tgcccatcta tgcaact 720
gtttccatgg ggctctggc cttcatcaca gctggagggt ccctccgaag tattcagcgc 780
agcctcttgtt gccgacggca ggaggacagt cgggtgatgg tgtattctgc cctgcgcac 840
ccacccgagg actgaggaa cctaggggg acccctggc ctgggtgccc ctccgtatgt 900
cctcgccctg tatttctcca tctccagttc tggacagtg 939

<210> 12

<211> 265

<212> PRT

<213> Homo sapiens

<400> 12

Met Gly Ala Ala Val Phe Phe Gly Cys Thr Phe Val Ala Phe Gly Pro
1 5 10 15

Ala Phe Ala Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu Arg Val
20 25 30

Ile Ile Leu Val Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Leu
35 40 45

Columbia 5199-14 6-20.ST25.txt

Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr Asp Arg Ser Asp
50 55 60

Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly Ala Ala Val Ser Val
65 70 75 80

Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys
85 90 95

Ala Asp Glu Gly Leu Ala Ser Leu Ser Glu Asp Gly Arg Ser Pro Ile
100 105 110

Ser Ile Arg Gln Met Ala Tyr Val Ser Gly Leu Ser Phe Gly Ile Ile
115 120 125

Ser Gly Val Phe Ser Val Ile Asn Ile Leu Ala Asp Ala Leu Gly Pro
130 135 140

Gly Val Val Gly Ile His Gly Asp Ser Pro Tyr Tyr Phe Leu Thr Ser
145 150 155 160

Ala Phe Leu Thr Ala Ala Ile Ile Leu Leu His Thr Phe Trp Gly Val
165 170 175

Val Phe Phe Asp Ala Cys Glu Arg Arg Tyr Trp Ala Leu Gly Leu
180 185 190

Val Val Gly Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu Asn Pro
195 200 205

Trp Tyr Glu Ala Ser Leu Leu Pro Ile Tyr Ala Val Thr Val Ser Met
210 215 220

Columbia 5199-14 6-20.ST25.txt

Gly Leu Trp Ala Phe Ile Thr Ala Gly Gly Ser Leu Arg Ser Ile Gln
225 230 235 240

Arg Ser Leu Leu Cys Arg Arg Gln Glu Asp Ser Arg Val Met Val Tyr
245 250 255

Ser Ala Leu Arg Ile Pro Pro Glu Asp
260 265

<210> 13

<211> 885

<212> DNA

<213> Homo sapiens

<400> 13

tttccgcgtt ggccatgact gcggccgtgt tcttcggctg cgccttcatt gccttcgggc 60
ctgcgcgtcgc cctttatgtc ttacccatcg ccacccgagcc gttgcgtatc atttcctca 120
tcgcggagc tttcttctgg ttgggtgtctc tactgatttc gtcccttggtt tggttcatgg 180
caagagtcat tattgacaac aaagatggac caacacagaa atatctgctg atctttggag 240
cgtttgcgtc tgcgtatatac cgagaaatgt tccgatttgc atattataaa ctctaaaaaa 300
aaggccagtga aggtttgaag agtataaacc caggtgagac agcaccctct atgcgactgc 360
tggcctatgt ttctggcttg ggctttggaa tcatgagtgg agtattttcc tttgtgaata 420
ccctatctga ctccctgggg ccaggcacag tgggcattca tggagattct cctcaattct 480
tcctttattc agctttcatg acgctggtca ttatcttgc tcatgtattc tggggcattg 540
tattttttga tggctgtgag aagaaaaagt ggggcattcct cttatcggtt ctccgtaccc 600
acctgctggt gtca gcccag accttcataa gttcttattt tggataaac ctggcgtcag 660

Columbia 5199-14 6-20.ST25.txt

catttataat cctggtgctc atgggcacct gggcattctt agctgcggga ggcagctgcc 720
gaagcctgaa actctgcctg ctctgccaag acaagaacct tcttcttac aaccagcgct 780
ccagataacc tcagggAACc agcacttccc aaaccgcaga ctacatctt agaggaagca 840
caactgtgcc ttttctgaa aatccctttt tctggtgaa aaaaa 885

<210> 14

<211> 257

<212> PRT

<213> Homo sapiens

<400> 14

Met Thr Ala Ala Val Phe Phe Gly Cys Ala Phe Ile Ala Phe Gly Pro
1 5 10 15

Ala Leu Ala Leu Tyr Val Phe Thr Ile Ala Thr Glu Pro Leu Arg Ile
20 25 30

Ile Phe Leu Ile Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Ile
35 40 45

Ser Ser Leu Val Trp Phe Met Ala Arg Val Ile Ile Asp Asn Lys Asp
50 55 60

Gly Pro Thr Gln Lys Tyr Leu Leu Ile Phe Gly Ala Phe Val Ser Val
65 70 75 80

Tyr Ile Arg Glu Met Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys
85 90 95

Columbia 5199-14 6-20.ST25.txt

Ala Ser Glu Gly Leu Lys Ser Ile Asn Pro Gly Glu Thr Ala Pro Ser
100 105 110

Met Arg Leu Leu Ala Tyr Val Ser Gly Leu Gly Phe Gly Ile Met Ser
115 120 125

Gly Val Phe Ser Phe Val Asn Thr Leu Ser Asp Ser Leu Gly Pro Gly
130 135 140

Thr Val Gly Ile His Gly Asp Ser Pro Gln Phe Phe Leu Tyr Ser Ala
145 150 155 160

Phe Met Thr Leu Val Ile Ile Leu Leu His Val Phe Trp Gly Ile Val
165 170 175

Phe Phe Asp Gly Cys Glu Lys Lys Trp Gly Ile Leu Leu Ile Val
180 185 190

Leu Leu Thr His Leu Leu Val Ser Ala Gln Thr Phe Ile Ser Ser Tyr
195 200 205

Tyr Gly Ile Asn Leu Ala Ser Ala Phe Ile Ile Leu Val Leu Met Gly
210 215 220

Thr Trp Ala Phe Leu Ala Ala Gly Ser Cys Arg Ser Leu Lys Leu
225 230 235 240

Cys Leu Leu Cys Gln Asp Lys Asn Phe Leu Leu Tyr Asn Gln Arg Ser
245 250 255

Arg

Columbia 5199-14 6-20.ST25.txt

<210> 15

<211> 762

<212> DNA

<213> Drosophila melanogaster

<400> 15

cagtaataat acaaagacaa gatgacgttg cccgagttct ttggctgcac cttcatcgcc 60
ttcgaccgc cttcgccctt gttcgcttc accatcgcca atgatccagt gcggatcatc 120
attctgattt cggccggcatt ctcttggctg ctttccctgc tggatcttc cctgtggat 180
gccctgattt cgctgaagga gttcctggca tttggcgtgg tcttctcggt gtgttccag 240
gaagccctcc ggtacatcat ctaccggata ctgcgcagca cggagcaggg attgcacgccc 300
gtggcggagg acacgcgagt gacggacaac aagcacatcc tggccatgt ctccggcttg 360
ggattcggca ttatatccgg gatgtttgca ctggtaatg tgctggctga tatgagtgg 420
cccgccacca tgggcttgaa gggcggaaact gagctattct tcgtcaccc tcggcccg 480
gcgttgcga ttatcctgct gcacacccttc tggagcgtta ttttctcaa cgcattcgac 540
acaaacaact atatccacat aggctatgtg gtttcagcc acctgttcgt ctccctgata 600
actctgctca atgccaatga gctttacacg accactctgc tgataaacta ctggtcacc 660
atacttacgg gagtcctggc cttccgggtg gctggaggaa catctcgag tttcagaaaa 720
ttcataacat gccagtaaac atactcctag tattaaccgc ct 762

<210> 16

<211> 238

<212> PRT

<213> Drosophila melanogaster

<400> 16

Met Thr Leu Pro Glu Phe Phe Gly Cys Thr Phe Ile Ala Phe Gly Pro
1 5 10 15

Pro Phe Ala Leu Phe Val Phe Thr Ile Ala Asn Asp Pro Val Arg Ile
20 25 30

Ile Ile Leu Ile Ala Ala Ala Phe Phe Trp Leu Leu Ser Leu Leu Ile
35 40 45

Ser Ser Leu Trp Tyr Ala Leu Ile Pro Leu Lys Glu Phe Leu Ala Phe
50 55 60

Gly Val Val Phe Ser Val Cys Phe Gln Glu Ala Phe Arg Tyr Ile Ile
65 70 75 80

Tyr Arg Ile Leu Arg Ser Thr Glu Gln Gly Leu His Ala Val Ala Glu
85 90 95

Asp Thr Arg Val Thr Asp Asn Lys His Ile Leu Ala Tyr Val Ser Gly
100 105 110

Leu Gly Phe Gly Ile Ile Ser Gly Met Phe Ala Leu Val Asn Val Leu
115 120 125

Ala Asp Met Ser Gly Pro Gly Thr Met Gly Leu Lys Gly Gly Thr Glu
130 135 140

Leu Phe Phe Val Thr Ser Ala Ala Gln Ala Leu Ser Ile Ile Leu Leu
145 150 155 160

Columbia 5199-14 6-20.ST25.txt

His Thr Phe Trp Ser Val Ile Phe Phe Asn Ala Phe Asp Thr Asn Asn
165 170 175

Tyr Ile His Ile Gly Tyr Val Val Phe Ser His Leu Phe Val Ser Leu
180 185 190

Ile Thr Leu Leu Asn Ala Asn Glu Leu Tyr Thr Thr Leu Leu Ile
195 200 205

Asn Tyr Leu Val Thr Ile Leu Thr Gly Val Leu Ala Phe Arg Val Ala
210 215 220

Gly Gly Thr Ser Arg Ser Phe Arg Lys Phe Ile Thr Cys Gln
225 230 235

<210> 17

<211> 2301

<212> DNA

<213> Homo sapiens

<400> 17

atggggctg cgggtttttt cggctgact ttctgcgt tcggccggc cttcgcgctt 60

ttcttgatca ctgtggctgg ggacccgctt cgcgttatca tcctggtcgc agggtgatgt 120

gagggcccgagacgcggg agagcgtcga agagagagggt gcggaaagggg ctggaggaac 180

tggggcaagc ctggggccgtt gaattggggca cgataagtgcg gaggtgaagt ttggggcgag 240

gtgaggggtt gggctctggga gatttgtcct ttcccgcaat tggtttccac cttccaagga 300

tctcacagat tcctcctata ttccctccag cgacgtcaga gaaggccaa ggccgagact 360

cgtgagggggg ctgtgctgac ctaggcaggc cgagtcaggt gccttagggg aggatccagg 420

Columbia 5199-14 6-20.ST25.txt

aacggatacc tcgccc ttcc gtgctcgac actctggctg tcatcgctc gaagactctt 480
taatttagatt tctccccttt ccagtgcgtt cactttctc cagatgagtc tcttggtgaa 540
gacagttacc ctacctggtc catgtctccc taaccatccg gaaggctaac ttccactttt 600
caagcagctt tggctggttt ccctccttga tttctctggc tcccactact attgcttgac 660
tcactgcccc tgtctttct cagggcattt ttctggctgg tctccctgct cctggccctc 720
gtggtctggc tcatcttggc ccatgtgacc gaccggtcag atgcccggct ccagtacggc 780
ctcctgattt ttgggtctgc tgcctctgtc cttctacagg aggtgtccg ctttgcctac 840
tacaagctgc ttaagtaaga agatggagtg gtctggaggg gagagggggca aaggactgca 900
ctatgggaag tggggcagcc cctgggtgct ggtttggaaag aggaggcact aaggaggac 960
attagagggaa aaggagcatc cctgccc tccatgtttc ccctacccca ccccacccca 1020
ggaaggcaga tgaggggta gcatcgctga gtgaggacgg aagatcaccc atctccatcc 1080
gccagatggc ctatggtgag ccaagggaga gggactggag gagggagttg gacagcccc 1140
tcctctaggg aagtctctaa atatccacat gttctaagtg gcttcttact ttccttcatc 1200
cgtcacttcc aaagaaagtt ggtctggagg gagagttagt gtgaaagaat tgtaaccggg 1260
aatggggagg ggtcagtggt gaacaggca tagtgtgatc tctgacattt atgagatcct 1320
ccctcccccc agttctggt ctctccctcg gatcatcag tgggtcttc tctgttatca 1380
atatttggc tcatgcattt gggccagggtg tgggtggat ccatggagac tcaccctatt 1440
acttcctgac ttcaggtaag atccaccc tttcttagcct ttaccccca tccatcctt 1500
tccctgatct gatttattgg cttccctga gagacttctt tggctcaaca tctcaggagc 1560
ctgggagaag atcaggatg tatctcc tccatctccct ccctgcagcc tttctgacag 1620
cagccattat cctgctccat acctttggg gagttgtgtt ctttgcattt tttgatgcc 1680
gacggtaactg ggcttgggc ctgggtggttg ggagtccact actgacatcg ggactggta 1740

Columbia 5199-14 6-20.ST25.txt

gttggagaca ggggcctgag ttagggagaa aacatttaa tggtgagtgg gatgtggggg 1800
aaagggtatc ctcaattttt aacatttttt aacttacctgg gaggaggagg aaaggtgagt 1860
ctttcaaggt ctctcaccc agcatcattt ctatcacctg ctctggggag gaggttgaaa 1920
ggattagtca aactgtaatg cagaggccct gaggtgagca ggagcggcag aaaccttga 1980
gtttctgagg agctgaaaat caaaagtccc cttaccaca agatgttggt gctctgaagg 2040
gaaagactgg agaattttag agagatatct gggagtccaga aaggtacaga gagaatatgg 2100
ggattaggtc gagggagaat ctaatctttt tcctactttt accctcccttc ctagacattc 2160
ctgaaccctt ggtatgaggc cagcctgctg cccatctatg cagtcaactgt ttccatgggg 2220
ctctggccct tcatcacagc tggagggtcc ctccgaagta ttcagcgcag cctttgtgt 2280
aaggactgac tacctggact g 2301

<210> 18

<211> 1200

<212> PRT

<213> *Mus musculus*

<400> 18

Thr Thr Cys Cys Cys Thr Cys Cys Cys Thr Thr Cys Cys Cys Cys Ala
1 5 10 15

Gly Cys Thr Gly Cys Cys Cys Ala Gly Thr Cys Ala Thr Gly Gly Gly
20 25 30

Gly Gly Cys Thr Gly Cys Thr Gly Thr Cys Ala Thr Thr Thr Thr Cys
35 40 45

Gly Gly Ala Thr Gly Cys Ala Cys Cys Thr Thr Cys Gly Thr Cys Gly

50 55 60

Cys Gly Thr Thr Cys Gly Gly Cys Cys Cys Ala Gly Cys Cys Thr Thr
65 70 75 80

Cys Thr Cys Cys Thr Thr Thr Cys Cys Thr Gly Ala Thr Cys
85 90 95

Ala Cys Thr Gly Thr Ala Gly Cys Thr Gly Gly Ala Gly Ala Cys Cys
100 105 110

Cys Ala Cys Thr Thr Cys Gly Gly Cys Gly Thr Thr Ala Thr Cys Ala Thr
115 120 125

Cys Cys Thr Gly Gly Thr Gly Gly Cys Gly Gly Ala Gly Cys Cys
130 135 140

Thr Thr Thr Thr Cys Thr Gly Gly Cys Thr Gly Thr Cys Thr
145 150 155 160

Cys Cys Cys Thr Gly Cys Thr Cys Thr Gly Gly Cys Thr Thr Cys
165 170 175

Thr Gly Thr Gly Gly Thr Cys Thr Gly Gly Thr Thr Cys Ala Thr Cys
180 185 190

Thr Thr Gly Gly Thr Cys Cys Ala Thr Gly Thr Gly Ala Cys Ala Gly
195 200 205

Ala Cys Cys Gly Ala Thr Cys Ala Gly Ala Thr Gly Cys Ala Cys Gly
210 215 220

Gly Cys Thr Cys Cys Ala Gly Thr Ala Thr Gly Gly Cys Cys Thr Cys

225 230 235 240

Cys Thr Gly Ala Thr Thr Thr Thr Gly Gly Thr Gly Cys Thr Gly
245 250 255

Cys Thr Gly Thr Cys Thr Cys Thr Gly Thr Cys Cys Thr Thr Cys Thr
260 265 270

Ala Cys Ala Gly Gly Ala Ala Gly Thr Gly Thr Thr Cys Cys Gly Thr
275 280 285

Thr Thr Thr Gly Cys Thr Thr Ala Cys Thr Ala Cys Ala Ala Gly Cys
290 295 300

Thr Cys Cys Thr Thr Ala Ala Gly Ala Ala Gly Gly Cys Ala Gly Ala
305 310 315 320

Thr Gly Ala Gly Gly Cys Thr Thr Ala Gly Cys Ala Thr Cys Ala
325 330 335

Cys Thr Gly Ala Gly Thr Gly Ala Gly Gly Ala Cys Gly Gly Ala Ala
340 345 350

Gly Ala Thr Cys Ala Cys Cys Cys Ala Thr Cys Thr Cys Cys Ala Thr
355 360 365

Cys Cys Gly Ala Cys Ala Gly Ala Thr Gly Gly Cys Cys Thr Ala Thr
370 375 380

Gly Thr Thr Thr Cys Thr Gly Gly Thr Cys Thr Gly Thr Cys Cys Thr
385 390 395 400

Columbia 5199-14 6-20.ST25.txt

Thr Cys Gly Gly Thr Ala Thr Cys Ala Thr Cys Ala Gly Thr Gly Gly
405 410 415

Thr Gly Thr Cys Thr Thr Cys Thr Cys Thr Gly Thr Thr Ala Thr Cys
420 425 430

Ala Ala Thr Ala Thr Thr Thr Gly Gly Cys Thr Gly Ala Thr Gly
435 440 445

Cys Ala Cys Thr Thr Gly Gly Cys Cys Ala Gly Gly Thr Gly Thr
450 455 460

Gly Gly Thr Thr Gly Gly Ala Thr Cys Cys Ala Thr Gly Gly Ala
465 470 475 480

Gly Ala Cys Thr Cys Ala Cys Cys Cys Thr Ala Thr Thr Ala Cys Thr
485 490 495

Thr Cys Cys Thr Gly Ala Cys Thr Thr Cys Ala Gly Cys Cys Thr Thr
500 505 510

Thr Cys Thr Gly Ala Cys Ala Gly Cys Ala Gly Cys Cys Ala Thr Thr
515 520 525

Ala Thr Cys Cys Thr Gly Cys Thr Cys Cys Ala Cys Ala Cys Cys Thr
530 535 540

Thr Thr Thr Gly Gly Gly Ala Gly Thr Thr Gly Thr Gly Thr Thr
545 550 555 560

Cys Thr Thr Thr Gly Ala Thr Gly Cys Cys Thr Gly Thr Gly Ala Gly
565 570 575

Columbia 5199-14 6-20.5T25.txt

Ala Gly Gly Ala Gly Ala Cys Gly Gly Thr Ala Cys Thr Gly Gly Gly
580 585 590

Cys Thr Thr Thr Gly Gly Cys Cys Thr Gly Gly Thr Ala Gly Thr
595 600 605

Thr Gly Gly Ala Gly Thr Cys Ala Cys Cys Thr Thr Cys Thr Gly
610 615 620

Ala Cys Ala Thr Cys Gly Gly Ala Cys Thr Gly Ala Cys Ala Thr
625 630 635 640

Thr Cys Cys Thr Gly Ala Ala Cys Cys Cys Thr Gly Gly Thr Ala
645 650 655

Thr Gly Ala Gly Gly Cys Thr Ala Gly Cys Cys Thr Gly Cys Thr Gly
660 665 670

Cys Cys Cys Ala Thr Cys Thr Ala Thr Gly Cys Ala Gly Thr Cys Ala
675 680 685

Cys Cys Gly Thr Thr Cys Cys Ala Thr Gly Gly Gly Cys Thr
690 695 700

Cys Thr Gly Gly Cys Gly Thr Thr Cys Ala Thr Cys Ala Cys Ala
705 710 715 720

Gly Cys Cys Gly Gly Ala Gly Gly Cys Thr Cys Cys Cys Thr Cys Cys
725 730 735

Gly Ala Ala Gly Thr Ala Thr Cys Cys Ala Gly Cys Gly Cys Ala Gly
740 745 750

Columbia 5199-14 6-20.ST25.txt

Cys Cys Thr Thr Cys Gly Thr Gly Thr Ala Ala Gly Gly Ala Cys
755 760 765

Thr Gly Ala Cys Thr Ala Cys Cys Thr Gly Gly Ala Cys Thr Gly Ala
770 775 780

Thr Cys Gly Cys Cys Gly Ala Cys Ala Gly Ala Thr Cys Cys Cys
785 790 795 800

Ala Thr Cys Thr Gly Cys Cys Thr Ala Thr Cys Cys Ala Cys Thr Gly
805 810 815

Cys Cys Cys Ala Thr Gly Ala Cys Thr Gly Ala Ala Cys Cys Cys Ala
820 825 830

Gly Cys Cys Cys Cys Ala Gly Cys Cys Cys Gly Gly Gly Thr Cys Cys
835 840 845

Ala Thr Thr Gly Cys Cys Cys Thr Cys Ala Thr Cys Cys Thr Cys Cys
850 855 860

Gly Thr Cys Thr Cys Cys Thr Cys Gly Cys Thr Gly Ala Thr Gly Thr
865 870 875 880

Gly Cys Cys Cys Cys Gly Cys Thr Thr Cys Cys Thr Thr Cys Cys Gly
885 890 895

Gly Gly Thr Thr Thr Gly Gly Cys Gly Thr Thr Gly Thr Cys Cys Ala
900 905 910

Thr Thr Thr Gly Thr Gly Ala Cys Cys Thr Gly Thr Ala Gly Thr Cys
915 920 925

Columbia 5199-14 6-20.ST25.txt

Thr Cys Thr Ala Ala Gly Cys Thr Thr Thr Cys Thr Cys Ala Gly Gly
930 935 940

Ala Gly Cys Ala Gly Cys Cys Thr Gly Gly Gly Thr Gly Cys Ala Gly
945 950 955 960

Cys Cys Ala Gly Thr Cys Ala Gly Gly Ala Cys Thr Gly Gly Thr
965 970 975

Gly Gly Gly Thr Thr Thr Gly Ala Ala Thr Cys Thr Gly Cys Ala Thr
980 985 990

Cys Thr Cys Thr Cys Cys Cys Ala Cys Cys Ala Cys Cys Thr Gly
995 1000 1005

Gly Gly Gly Ala Cys Cys Cys Cys Thr Thr Gly Thr Thr Gly
1010 1015 1020

Thr Cys Cys Ala Gly Gly Thr Cys Thr Cys Cys Cys Ala Thr
1025 1030 1035

Gly Thr Gly Thr Cys Ala Gly Thr Gly Cys Thr Cys Cys Ala Cys
1040 1045 1050

Cys Cys Thr Cys Ala Cys Cys Cys Thr Gly Cys Cys Cys Ala Thr
1055 1060 1065

Gly Ala Cys Thr Cys Ala Cys Cys Cys Cys Gly Cys Thr Thr Cys
1070 1075 1080

Cys Cys Cys Thr Cys Thr Gly Cys Ala Gly Gly Cys Cys Gly Cys

Columbia 5199-14 6-20.ST25.txt

1085 1090 1095

Cys Gly Gly Cys Ala Gly Gly Ala Gly Gly Ala Cys Ala Gly Thr
1100 1105 1110

Cys Gly Gly Gly Thr Gly Ala Thr Gly Gly Thr Gly Thr Ala Cys
1115 1120 1125

Thr Cys Thr Gly Cys Cys Cys Thr Gly Cys Gly Cys Ala Thr Cys
1130 1135 1140

Cys Cys Ala Cys Cys Cys Gly Ala Gly Gly Ala Cys Thr Gly Ala
1145 1150 1155

Gly Gly Gly Ala Ala Cys Ala Thr Gly Gly Gly Gly Gly Gly
1160 1165 1170

Cys Cys Cys Cys Thr Gly Gly Gly Cys Cys Thr Gly Gly Gly
1175 1180 1185

Thr Gly Cys Cys Cys Thr Cys Cys Cys Gly Ala Thr
1190 1195 1200

<210> 19

<211> 247

<212> PRT

<213> *Mus musculus*

<400> 19

Met Gly Ala Ala Val Phe Phe Gly Cys Thr Phe Val Ala Phe Gly Pro
1 5 10 15

Columbia 5199-14 6-20.ST25.txt

Ala Phe Ser Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu Arg Val
20 25 30

Ile Ile Leu Val Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Leu
35 40 45

Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr Asp Arg Ser Asp
50 55 60

Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly Ala Ala Val Ser Val
65 70 75 80

Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys
85 90 95

Ala Asp Glu Gly Leu Ala Ser Leu Ser Glu Asp Gly Arg Ser Pro Ile
100 105 110

Ser Ile Arg Gln Met Ala Tyr Val Ser Gly Leu Ser Phe Gly Ile Ile
115 120 125

Ser Gly Val Phe Ser Val Ile Asn Ile Leu Ala Asp Ala Leu Gly Pro
130 135 140

Gly Val Val Gly Ile His Gly Asp Ser Pro Tyr Tyr Phe Leu Thr Ser
145 150 155 160

Ala Phe Leu Thr Ala Ala Ile Ile Leu Leu His Thr Phe Trp Gly Val
165 170 175

Val Phe Phe Asp Ala Cys Glu Arg Arg Tyr Trp Ala Leu Gly Leu
180 185 190

Columbia 5199-14 6-20.ST25.txt

Val Val Gly Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu Asn Pro
195 200 205

Trp Tyr Glu Ala Ser Leu Leu Pro Ile Tyr Ala Val Thr Val Ser Met
210 215 220

Gly Leu Trp Ala Phe Ile Thr Ala Gly Gly Ser Leu Arg Ser Ile Gln
225 230 235 240

Arg Ser Leu Ser Cys Lys Asp
245

<210> 20

<211> 867

<212> DNA

<213> *Mus musculus*

<400> 20

tccctccct tccccagctg cccagtcatg ggggctgctg tggggcgatgcaccc 60

gtcgcggtcg gcccagcctt ctccccccct ctgtatcactg tagctggaga cccacttcgg 120

gttatacatcc tggtggcgagg agccttttc tggctggctt ccctgtctt ggcttctgtg 180

gtctgggtca tcttggtcca tggacagac cgtatcagatg cacggctcca gtatggcctc 240

ctgatttttg gtgtgtgtgt ctctgtcctt ctacaggaag tggccgttt tgcttactac 300

aagctccctta agaaggcaga tgagggtta gcatcactga gtgaggacgg aagatcaccc 360

atctccatcc gacagatggc ctatgtttct ggtctgtcct tcggatcat cagtgggtgc 420

ttctctgtta tcaatatttt ggctgtatgca cttggggccag gtgtgggtgg gatccatgg 480

gactcaccct attacttccct gacttcagcc tttctgacag cagccattat cctgctccac 540

Columbia 5199-14 6-20.ST25.txt

accttttggg gagttgtgtt ctttgcgtgcc tgtgagagga gacggtaactg ggctttgggc 600
ctggtagttg ggagtcaccc tctgacatcg ggactgacat tcctgaaccc ctggtatgag 660
gctagcctgc tgcccatcta tgcaagtacc gttccatgg ggctctggc gttcatcaca 720
gccggaggct ccctccgaag tatccagcgc agccttcgt gccgcggca ggaggacagt 780
cgggtgtatgg tgtactctgc cctgcgcata ccacccgagg actgagggaa catggggggg 840
ccccctgggccc tggggtgccc tcccgat 867

<210> 21

<211> 265

<212> PRT

<213> *Mus musculus*

<400> 21

Met Gly Ala Ala Val Phe Phe Gly Cys Thr Phe Val Ala Phe Gly Pro
1 5 10 15

Ala Phe Ser Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu Arg Val
20 25 30

Ile Ile Leu Val Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Leu
35 40 45

Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr Asp Arg Ser Asp
50 55 60

Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly Ala Ala Val Ser Val
65 70 75 80

Columbia 5199-14 6-20.5T25.txt

Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys
85 90 95

Ala Asp Glu Gly Leu Ala Ser Leu Ser Glu Asp Gly Arg Ser Pro Ile
100 105 110

Ser Ile Arg Gln Met Ala Tyr Val Ser Gly Leu Ser Phe Gly Ile Ile
115 120 125

Ser Gly Val Phe Ser Val Ile Asn Ile Leu Ala Asp Ala Leu Gly Pro
130 135 140

Gly Val Val Gly Ile His Gly Asp Ser Pro Tyr Tyr Phe Leu Thr Ser
145 150 155 160

Ala Phe Leu Thr Ala Ala Ile Ile Leu Leu His Thr Phe Trp Gly Val
165 170 175

Val Phe Phe Asp Ala Cys Glu Arg Arg Arg Tyr Trp Ala Leu Gly Leu
180 185 190

Val Val Gly Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu Asn Pro
195 200 205

Trp Tyr Glu Ala Ser Leu Leu Pro Ile Tyr Ala Val Thr Val Ser Met
210 215 220

Gly Leu Trp Ala Phe Ile Thr Ala Gly Gly Ser Leu Arg Ser Ile Gln
225 230 235 240

Arg Ser Leu Ser Cys Arg Arg Gln Glu Asp Ser Arg Val Met Val Tyr
245 250 255

Columbia 5199-14 6-20.ST25.txt

Ser Ala Leu Arg Ile Pro Pro Glu Asp
260 265

<210> 22

<211> 92

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(92)

<223> PCR primer

<400> 22

gactgcgata tcatgaagtt atgcatatta ctggccgtcg tggcctttgt tggcctctcg 60

ctcggggatg cagaattccg acatgactca gg 92

<210> 23

<211> 77

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(77)

<223> PCR primer

<400> 23

Columbia 5199-14 6-20.ST25.txt

gccgactcta gactagaggc ttgcataatc tggcacatca tatggatagt tctgcatctg 60

ctcaaagaac ttgtagg 77

<210> 24

<211> 41

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(41)

<223> PCR primer

<400> 24

cccgggggta cctttcgat ggaaatgcgt ctgaatgcgg c 41

<210> 25

<211> 36

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(36)

<223> PCR primer

<400> 25

Columbia 5199-14 6-20.ST25.txt

aaatttgaat tcaccaaata atgcggcatt gcttgc 36

<210> 26

<211> 30

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(30)

<223> PCR primer

<400> 26

gccatggggg ctgcggtgtt tttcggtgc 30

<210> 27

<211> 32

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(27)

<223> PCR primer

<400> 27

gtccaggtag tcagtcctta cacaagagct gc 32

Columbia 5199-14 6-20.ST25.txt

<210> 28

<211> 32

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(32)

<223> PCR primer

<400> 28

gtccttacac aagaggctgc gctgaatact tc 32

<210> 29

<211> 31

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(31)

<223> PCR primer

<400> 29

gtcctcggtt gggatgcgca gggcagaata c 31

Columbia 5199-14 6-20.ST25.txt

<210> 30

<211> 27

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(27)

<223> PCR primer

<400> 30

gaatttaatac gactcactat agggaga 27

<210> 31

<211> 23

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(23)

<223> PCR primer

<400> 31

atttaggta cactatagaa gcg 23

<210> 32

Columbia 5199-14 6-20.ST25.txt

<211> 31

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(31)

<223> PCR primer

<400> 32

gggctcgccct ctgaggatga cgccaaatgtg g 31

<210> 33

<211> 32

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(32)

<223> PCR primer

<400> 33

aatgcggagg ggtcctcttg gcgaaaggac ag 32

<210> 34

<211> 34

Columbia 5199-14 6-20.5T25.txt

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(34)

<223> PCR primer

<400> 34

atggaaatgc gtctgaatgc ggcttccata tggc 34

<210> 35

<211> 31

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(31)

<223> PCR primer

<400> 35

ttcgtatgga ctgtctccaa agttgtttcc g 31

<210> 36

<211> 33

<212> DNA

Columbia 5199-14 6-20.ST25.txt

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(33)

<223> PCR primer

<400> 36

gatgcagaat ccgacatgac tcaggatatg aag 33

<210> 37

<211> 33

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(33)

<223> PCR primer

<400> 37

gttctgcatc tgctcaaaga acttgttaggt tgg 33

<210> 38

<211> 29

<212> DNA

<213> Artificial sequence

Columbia 5199-14 6-20.ST25.txt

<220>

<221> primer_bind

<222> (1)..(29)

<223> PCR primer

<400> 38

cacattggcc aagctggtgt ccagatcg 29

<210> 39

<211> 28

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(28)

<223> PCR primer

<400> 39

gcgcaacgag gccgtaatgg aggaaacg 28

<210> 40

<211> 30

<212> DNA

<213> Artificial sequence

<220>

Columbia 5199-14 6-20.ST25.txt

<221> primer_bind

<222> (1)..(30)

<223> PCR primer

<400> 40

cagctgaaac gaaccttct tggcttcgac 30

<210> 41

<211> 30

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(30)

<223> PCR primer

<400> 41

caaatcggtt gcacaaacat ttaggcattc 30

<210> 42

<211> 31

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

Columbia 5199-14 6-20.ST25.txt

<222> (1)..(31)

<223> PCR primer

<400> 42

gctatgtcgc tatcaaggct gctgcccacg c 31

<210> 43

<211> 34

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(34)

<223> PCR primer

<400> 43

gaatgtactg ggcgggaccc gccttctggg catg 34

<210> 44

<211> 34

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(34)

Columbia 5199-14 6-20.ST25.txt

<223> PCR primer

<400> 44

cgatgcgtga cgacgtttc aagcacaatg cttg 34

<210> 45

<211> 34

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(34)

<223> PCR primer

<400> 45

ccaggtcgta tcgtccgtag tcgcggaaaga ggag 34

<210> 46

<211> 34

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(34)

<223> PCR primer

Columbia 5199-14 6-20.ST25.txt

<400> 46

ttaaatatgt ctgacaacaa cagcggatcc ggag 34

<210> 47

<211> 35

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(35)

<223> PCR primer

<400> 47

ttaacataac gctcatagaa ctccagcgaa ctaac 35

<210> 48

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(26)

<223> PCR primer

<400> 48

ccggaaatat catcatttca ggca

26

<210> 49

<211> 27

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(27)

<223> PCR primer

<400> 49

gtcgaggacc attagcttg ttccctc

27

<210> 50

<211> 28

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(28)

<223> PCR primer

<400> 50

tgcataata atcaatacaa tccacctg

28

Columbia 5199-14 6-20.ST25.txt

<210> 51

<211> 27

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(27)

<223> PCR primer

<400> 51

gatgccgcca ctcttgaaga tggccag 27

<210> 52

<211> 34

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(34)

<223> PCR primer

<400> 52

gatgacgttg cccgagttct ttggctgcac cttc 34

<210> 53

Columbia 5199-14 6-20.ST25.txt

<211> 32

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(32)

<223> PCR primer

<400> 53

aatactagga gtagtttac tggcatgtta tg 32

<210> 54

<211> 23

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(23)

<223> PCR primer

<400> 54

taatacgact cactataggg aga 23

<210> 55

<211> 23

Columbia 5199-14 6-20.ST25.txt

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(23)

<223> PCR primer

<400> 55

atttaggta cactatagaa gcg

23

<210> 56

<211> 23

<212> RNA

<213> Artificial sequence

<220>

<221> misc_RNA

<222> (1)..(23)

<223> sense RNA

<400> 56

gccaucauga ucagugucau uaa

23

<210> 57

<211> 23

<212> RNA

<213> Artificial sequence

<220>

<221> misc_RNA

<222> (1)..(23)

<223> antisense RNA

<400> 57

aaugacacug aucaugaugg cug 23

<210> 58

<211> 23

<212> RNA

<213> Artificial sequence

<220>

<221> misc_RNA

<222> (1)..(23)

<223> sense RNA

<400> 58

cacccucauc augaucagcg uaa 23

<210> 59

<211> 23

<212> RNA

Columbia 5199-14 6-20.ST25.txt

<213> Artificial sequence

<220>

<221> misc_RNA

<222> (1)..(23)

<223> antisense RNA

<400> 59

acgcugauca ugaugagggu gug 23

<210> 60

<211> 23

<212> RNA

<213> Artificial sequence

<220>

<221> misc_RNA

<222> (1)..(23)

<223> sense RNA

<400> 60

ccugcuaaac gccacucauc aaa 23

<210> 61

<211> 23

<212> RNA

<213> Artificial sequence

<220>

<221> misc_RNA

<222> (1)..(23)

<223> antisense RNA

<400> 61

ugaugagugg cguugagcag gug 23

<210> 62

<211> 23

<212> RNA

<213> Artificial sequence

<220>

<221> misc_RNA

<222> (1)..(23)

<223> sense RNA

<400> 62

uagaugaggg caugcagauc caa 23

<210> 63

<211> 23

<212> RNA

<213> Artificial sequence

<220>

Columbia 5199-14 6-20.ST25.txt

<221> misc_RNA

<222> (1)..(23)

<223> antisense RNA

<400> 63

ggaucugcau gcccucaucu aug

23

<210> 64

<211> 23

<212> RNA

<213> Artificial sequence

<220>

<221> misc_RNA

<222> (1)..(23)

<223> sense RNA

<400> 64

cggcugcacu uucguucgcgu uaa

23

<210> 65

<211> 23

<212> RNA

<213> Artificial sequence

<220>

<221> misc_RNA

<222> (1)..(23)

<223> antisense RNA

<400> 65

aacgcgcacga aagugcagcc gug 23

<210> 66

<211> 23

<212> RNA

<213> Artificial sequence

<220>

<221> misc_RNA

<222> (1)..(23)

<223> sense RNA

<400> 66

cgucccuugu uugguucaug gaa 23

<210> 67

<211> 23

<212> RNA

<213> Artificial sequence

<220>

<221> misc_RNA

<222> (1)..(23)

Columbia 5199-14 6-20.ST25.txt

<223> antisense RNA

<400> 67

ccaugaacca aacaagggac gug 23

<210> 68

<211> 30

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(30)

<223> PCR primer

<400> 68

ccacccccc tccccacctga ccagccatgg 30

<210> 69

<211> 30

<212> DNA

<213> Artificial sequence

<220>

<221> primer_bind

<222> (1)..(30)

<223> PCR primer

Columbia 5199-14 6-20.ST25.txt

<400> 69

cactgtccag aactggagat ggagaaatac 30

<210> 70

<211> 258

<212> PRT

<213> *Mus musculus*

<400> 70

Met Thr Leu Pro Val Phe Phe Gly Cys Ala Phe Ile Ala Phe Gly Pro
1 5 10 15

Ala Phe Ala Leu Tyr Leu Phe Thr Ile Ala Thr Asp Pro Leu Arg Val
20 25 30

Ile Phe Leu Ile Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu
35 40 45

Ser Ser Met Phe Trp Phe Leu Val Arg Val Ile Thr Asn Asn Arg Asp
50 55 60

Glu Ser Val Gln Asn Tyr Leu Leu Ile Phe Gly Ala Leu Leu Ser Val
65 70 75 80

Cys Ile Gln Glu Leu Phe Arg Leu Ala Tyr Tyr Lys Leu Leu Lys Lys
85 90 95

Ala Ser Glu Gly Leu Lys Ser Ile Asn Pro Glu Glu Asp Ile Ala Pro
100 105 110

Columbia 5199-14 6-20.ST25.txt

Ser Met Arg Leu Leu Ala Tyr Val Ser Gly Leu Gly Phe Gly Ile Met
115 120 125

Ser Gly Val Phe Ser Phe Val Asn Thr Leu Ser Asn Ser Leu Gly Pro
130 135 140

Gly Thr Val Gly Ile His Gly Asp Ser Pro Gln Phe Phe Leu Asn Ser
145 150 155 160

Ala Phe Met Thr Leu Val Val Ile Met Leu His Val Phe Trp Gly Val
165 170 175

Val Phe Phe Asp Gly Cys Glu Lys Asn Lys Trp Tyr Thr Leu Leu Thr
180 185 190

Val Leu Leu Thr His Leu Val Val Ser Thr Gln Thr Phe Leu Ser Pro
195 200 205

Tyr Tyr Glu Val Asn Leu Val Thr Ala Tyr Ile Ile Met Val Leu Met
210 215 220

Gly Ile Trp Ala Phe Tyr Val Ala Gly Gly Ser Cys Arg Ser Leu Lys
225 230 235 240

Phe Cys Leu Leu Cys Gln Asp Lys Asp Phe Leu Leu Tyr Asn Gln Arg
245 250 255

Ser Arg

<210> 71

<211> 2563

Columbia 5199-14 6-20.ST25.txt

<212> DNA

<213> Drosophila melanogaster

<400> 71

ggccggctgc cttgccttc gaaagtcagt tgcgtgcgag ccgcgagcgc gagatcatca 60
aactgagaaa gtcggactgc gactcgaaac tgaaaattgaa actgaaagag agaaatattc 120
aaattgtcgt gtgtgtgggt gcaagcagag aatataatc tcaagaatat ctgaatacaa 180
gctcctggat ttacgagcag caaaactaag ttaccaatgt gcgagccgaa aaaagcgagt 240
aaaaaacgtg cgaatatgcc aactaactaa agacatttg attacaagaa acccacgcat 300
tttggattat aaacattgcg acaggcagaa aaacctaaga atttcttcaa cggcgccagc 360
atggagaacc caacgcagaa tggtaacgaa accaagggtgg atttgggcca ggagaaggag 420
aaggaggcgt cgccaggagga ggagcatgcc accgcccgtca aggagaccat cattgacatt 480
cccgccgcgt gctccacttc ctccaactcc tcgtcgtacg acaccgattt cagcacggcg 540
agcagcacct gctgcaccccg ccaaggcag cacaatctaca tgcaacgcga ggccatcccg 600
gccacgcccac ttccggagtc ggaggatatc ggcctgctga agtacgtcca ccgcccagcac 660
tggccctggt tcatcctagt gatctccatc attgagatgt ccatcttcgc ctacgaccgc 720
tacacaatgc ccgcccagaa tttcgggcta cccgttccga ttccgtcga ttccgtgctg 780
gtctatcgcc cggaccggcg tctgcagggtg tggcgcttct ttagctacat gttcctgcac 840
gccaactggc tccacctggg cttcaatatc gtcatccagc tggccctgg cattccctg 900
gagggtgatgc acggcacggc caggatcgcc gtgatctaca tggcggcggt ttttgcggaa 960
tccctgggca ccagtgtcggt cgactcgag gtcttccctgg tggccgcag cggccgtc 1020
tatgcccgt tggccgcaca tctggccaac atcacattga actatgcgc catgaagagc 1080
gcatccacgc aactcggtatc agttgtcatc ttgtctcct gcgatctggg ctatgtctc 1140

Columbia 5199-14 6-20.ST25.txt

tacaccata acttcgatgg aagcgccttc gccaagggtc cccaggtgtc gtacattgcc 1200
cacctgacgg gagccctggc aggactaacg atcggcttcc tggtgctgaa gaacttcggt 1260
catcgggagt acgagcagct catctggtgg ctagcgttgg gcgtctactg tgccctcacc 1320
gtcttcgcca tcgtttcaa cctgatcaac acggtgaccg cccagctgat ggaggagcag 1380
ggtgagggtga ttaccaggca tctgttgac gacctggag tgtcctaagt gtgaggttcg 1440
gagtcgtcag catgctcgca gggattcggg atctgcttgc gcttcaggag agatcgagag 1500
acagagagtt ggtggaaaag aaaagttcac tcaacgattt agttcaaaac taattcgata 1560
ttcggttggc ttttgctttt cgtagcatt atctcggtt cgttaccgtt tgcaagtaaa 1620
cgtttcagtt gcgaaacata gtacacaaac tcataaaaaa aaaaacaaat caagagaaat 1680
acactggaca aaaaaaagag cgaggagtga ggagaacata aaccgaagcc gaaacgtgt 1740
aacaatgtt gtgatagaac caaagactga atttatttcg cgtgtaaaaa ccaagtaaaa 1800
atcaagagga aaatcaaaga ggagaaacag aactaatcgc ctctcgctat gatttaaatg 1860
aacccaaatta tccatgtttt caattaatgg tttgtctgtt ttcttaattt atgtatttt 1920
tggccgcaat tactacgaat gaatcgaatc gaagcatcag caaactgtat caaattgttt 1980
atacatccat aagcataatg tgctccgaat tgtaggatta gtgttataat ttatataat 2040
ttaggatataa ctggccctcc taacaaattt tttcaaaattt taaatactat taagtcgcac 2100
actagtcataa caacaacaac agcaacagca aaaacaacaa aaaatgtatg gaaaaccaca 2160
gcaaaagaacc attcaattca gatcaattaa gcaaatcgag ttaaattaaa ttaaattata 2220
ctaaagtac ttaatgcgtt acaaaatcga gcaaatattt atcgtaatcc ctacacacac 2280
acacacacac actcgaaagt attactaatt atatttatgtt atggtagggc agcgagggtt 2340
tattaattcg tcaattgagc gaactatttt tttatattt tatttaataa tttatgtaaa 2400
ttcacacaaaa caagcacgaa aaaacaacaa caacacaaga gagagaagaa acaaaccaat 2460

Columbia 5199-14 6-20.ST25.txt

tcaactgtaa aaatatccaa ttgaaaaata cacacgaaaa gccaaagaaa ataaaaaatc 2520

aaaacatttc aagaatacaa cagtaataac aaaatacaaa aaa 2563

<210> 72

<211> 355

<212> PRT

<213> *Drosophila melanogaster*

<400> 72

Met Glu Asn Pro Thr Gln Asn Val Asn Glu Thr Lys Val Asp Leu Gly
1 5 10 15

Gln Glu Lys Glu Lys Glu Ala Ser Gln Glu Glu Glu His Ala Thr Ala
20 25 30

Val Lys Glu Thr Ile Ile Asp Ile Pro Ala Ala Cys Ser Thr Ser Ser
35 40 45

Asn Ser Ser Ser Tyr Asp Thr Asp Cys Ser Thr Ala Ser Ser Thr Cys
50 55 60

Cys Thr Arg Gln Gly Glu His Ile Tyr Met Gln Arg Glu Ala Ile Pro
65 70 75 80

Ala Thr Thr Leu Pro Glu Ser Glu Asp Ile Gly Leu Leu Lys Tyr Val
85 90 95

His Arg Gln His Trp Pro Trp Phe Ile Leu Val Ile Ser Ile Ile Glu
100 105 110

Ile Ala Ile Phe Ala Tyr Asp Arg Tyr Thr Met Pro Ala Gln Asn Phe

Columbia 5199-14 6-20.ST25.txt

115 120 125

Gly Leu Pro Val Pro Ile Pro Ser Asp Ser Val Leu Val Tyr Arg Pro
130 135 140

Asp Arg Arg Leu Gln Val Trp Arg Phe Phe Ser Tyr Met Phe Leu His
145 150 155 160

Ala Asn Trp Phe His Leu Gly Phe Asn Ile Val Ile Gln Leu Phe Phe
165 170 175

Gly Ile Pro Leu Glu Val Met His Gly Thr Ala Arg Ile Gly Val Ile
180 185 190

Tyr Met Ala Gly Val Phe Ala Gly Ser Leu Gly Thr Ser Val Val Asp
195 200 205

Ser Glu Val Phe Leu Val Gly Ala Ser Gly Gly Val Tyr Ala Leu Leu
210 215 220

Ala Ala His Leu Ala Asn Ile Thr Leu Asn Tyr Ala His Met Lys Ser
225 230 235 240

Ala Ser Thr Gln Leu Gly Ser Val Val Ile Phe Val Ser Cys Asp Leu
245 250 255

Gly Tyr Ala Leu Tyr Thr Gln Tyr Phe Asp Gly Ser Ala Phe Ala Lys
260 265 270

Gly Pro Gln Val Ser Tyr Ile Ala His Leu Thr Gly Ala Leu Ala Gly
275 280 285

Leu Thr Ile Gly Phe Leu Val Leu Lys Asn Phe Gly His Arg Glu Tyr

Columbia 5199-14 6-20.ST25.txt

290 295 300

Glu Gln Leu Ile Trp Trp Leu Ala Leu Gly Val Tyr Cys Ala Phe Thr
305 310 315 320

Val Phe Ala Ile Val Phe Asn Leu Ile Asn Thr Val Thr Ala Gln Leu
325 330 335

Met Glu Glu Gln Gly Glu Val Ile Thr Gln His Leu Leu His Asp Leu
340 345 350

Gly Val Ser
355

<210> 73

<211> 1121

<212> DNA

<213> *Drosophila melanogaster*

<400> 73

ccagaaagca aaatagaaac aaattttcca tatttcatgc taaattggca cagatccgta 60
ctactatgct catgagtcga gcgccttgcc ggagctggct accccaggtg gcccgagat 120
gtcatgctaa tgtaatgtg ccaatccgc ggataaactc tggtcatccg gggcgaggt 180
catgtcggca gattcacagc aaccgaaaac agagcagcaa cctgaagccg acgactgggg 240
agcctgcggc agcggagcag aacaccccggtgaa caatgtgatc aaggcggtgg 300
ccttcacggg agcatttacg gtcggctgct ttgcgggtgc caccatccgt ggtacgaga 360
acacacgttag cctaattctta gaaaaggctc gccaggcgag attcggtgg tggcagatc 420
gttcgcgtggc ggacagggat tactggacac agatcaaaca agacatccgg cggcactggg 480

Columbia 5199-14 6-20.ST25.txt

actcactgac acccggcgac aagatgttg ctccatctt actctgcaat ttggggcct 540
tcgccccatgtg gcgggtgccc gctctgaaat ccacaatgat tacctacttc acatccaatc 600
cagcggcgaa agtcgtctgc tggcccatgt tcctgtccac attcagccat tactcggcta 660
tgcacccccc cgccaaatag tacgtgatgc acagcttgc caacgctgctg gctgtatcgt 720
tgggtaaaga gcaattctta gcgggtctacc tcagcgccgg cgtcttctcc agtctgatga 780
gcgtgctcta caaggcggcc acgagtcagg cggggatgtc cctgggtgcg tctggagcta 840
taatgacact gctggcctat gtatgcaccc agtatccgga cacacaactt agcattctct 900
ttctaccgcg gttgacattc tccgctggag ctggattaa agtgctaattt ggcatcgact 960
ttgctggcgt cgtgatgggc tggaaaggct tcgatcacgc agcgcatttgc ggcggcgcca 1020
tgtttggcat cttttggcc acgtatgggg cacagatatg ggcaaagcgc attggctac 1080
tgaattacta ccatgacactg cgccggacga agcagaaaata g 1121

<210> 74

<211> 351

<212> PRT

<213> Drosophila melanogaster

<400> 74

Met Leu Met Ser Arg Ala Leu Cys Arg Ser Trp Leu Pro Gln Val Ala
1 5 10 15

Arg Arg Cys His Ala Asn Val Asn Val Pro Ile Leu Arg Ile Asn Ser
20 25 30

Gly His Pro Ala Ala Arg Ser Cys Arg Gln Ile His Ser Asn Arg Lys

Columbia 5199-14 6-20.5T25.txt

35 40 45

Gln Ser Ser Asn Leu Lys Pro Thr Thr Gly Glu Pro Ala Ala Ala Glu
50 55 60

Gln Asn Thr Pro Val Pro Val Asn Asn Val Ile Lys Ala Val Ala Phe
65 70 75 80

Thr Gly Ala Phe Thr Val Gly Cys Phe Ala Gly Ala Thr Ile Leu Glu
85 90 95

Tyr Glu Asn Thr Arg Ser Leu Ile Leu Glu Lys Ala Arg Gln Ala Arg
100 105 110

Phe Gly Trp Trp Gln Ser Arg Ser Leu Ala Asp Arg Asp Tyr Trp Thr
115 120 125

Gln Ile Lys Gln Asp Ile Arg Arg His Trp Asp Ser Leu Thr Pro Gly
130 135 140

Asp Lys Met Phe Ala Pro Ile Leu Leu Cys Asn Leu Val Ala Phe Ala
145 150 155 160

Met Trp Arg Val Pro Ala Leu Lys Ser Thr Met Ile Thr Tyr Phe Thr
165 170 175

Ser Asn Pro Ala Ala Lys Val Val Cys Trp Pro Met Phe Leu Ser Thr
180 185 190

Phe Ser His Tyr Ser Ala Met His Leu Phe Ala Asn Met Tyr Val Met
195 200 205

His Ser Phe Ala Asn Ala Ala Val Ser Leu Gly Lys Glu Gln Phe

Columbia 5199-14 6-20.ST25.txt

210 215 220

Leu Ala Val Tyr Leu Ser Ala Gly Val Phe Ser Ser Leu Met Ser Val
225 230 235 240

Leu Tyr Lys Ala Ala Thr Ser Gln Ala Gly Met Ser Leu Gly Ala Ser
245 250 255

Gly Ala Ile Met Thr Leu Leu Ala Tyr Val Cys Thr Gln Tyr Pro Asp
260 265 270

Thr Gln Leu Ser Ile Leu Phe Leu Pro Ala Leu Thr Phe Ser Ala Gly
275 280 285

Ala Gly Ile Lys Val Leu Met Gly Ile Asp Phe Ala Gly Val Val Met
290 295 300

Gly Trp Lys Phe Phe Asp His Ala Ala His Leu Gly Gly Ala Met Phe
305 310 315 320

Gly Ile Phe Trp Ala Thr Tyr Gly Ala Gln Ile Trp Ala Lys Arg Ile
325 330 335

Gly Leu Leu Asn Tyr Tyr His Asp Leu Arg Arg Thr Lys Gln Lys
340 345 350